

**AMENDMENTS TO THE CLAIMS**

The listing of claims presented below will replace all prior versions and listings of claims in the application.

**Listing of claims:**

1. (previously presented) A seat spring assembly for a seat base for supporting a sitting load comprising:

    a frame having a first and a second frame end with first and second sides connected to the first and second transverse frame ends;

    a plurality of flat leaf springs having leaf spring first ends connected to the first frame end and leaf spring second ends connected to the second frame end;

    each leaf spring having one V arch adjacent the leaf spring first end and one W arch adjacent the leaf spring second end;

    said V arch being oriented on a first vertical axis so that it opens upwardly and said W arch being formed in two segments, each segment being oriented on a second and third vertical axis so that said W arch opens upwardly;

    each leaf spring has a substantially flat center portion extending longitudinally and aligned horizontally to define a seating support surface upon which said load is borne;

    said V arch and said W arch flexing in response to said sitting load wherein said load is substantially aligned with said first, second and third vertical axes;

    a cross piece, said cross piece spanning and substantially perpendicularly interconnecting said leaf spring second ends, said leaf spring second ends being

attached to said cross piece so that said flat leaf springs are supported solely at said first and second ends; and

a plurality of coil springs, said coil springs connecting said cross piece to said second frame end to transmit loads from said interconnected leaf springs through said coil springs to said second frame end.

2. **(currently amended)** The seat spring assembly of claim 1 or 12 wherein each leaf spring has said substantially flat center portion bowed and extending between said V and W arches.

3. **(currently amended)** The seat spring assembly of claim 1 [[or 12]] wherein there are [[3-6]] 3 to 6 leaf springs for each seating position and a helper spring is attached to at least two of every 4 leaf springs, said helper spring being attached at one helper spring end between [[the]] its respective first leaf spring end and the first frame end, and the helper spring other end projecting below its respective leaf spring and extending for a length less than the length of [[the]] its respective leaf spring.

4. (previously presented) The seat spring assembly of claim 1, or 12 wherein the W arches when present have radii that permit each of such leaf springs to flex to extend each of such leaf springs and to accommodate twisting of each of such leaf springs.

5. (previously presented) The seat spring assembly of claim 1, 11 or 12 wherein there are 4 leaf springs for each seating position and the first and second sides of the frame are formed with a dropped center position between front and rear downwardly depending segments for clearance.

6. **(currently amended)** The seat spring assembly of claim 1, 11 or 12 wherein the frame is a U-shaped frame having first and second sides interconnected by said second end at the bottom of the U, and the first end crosses the opening on the U; the leaf springs are formed and arranged to have said W arch located proximate the frame first second ends where the leaf springs are joined to the cross piece, and/or said V or W arch proximate the first leaf end; and said substantially flat center portion is slightly bowed and extends between said W arch and said W arch.

7. **(currently amended)** The seat spring assembly of claim 1 or 12 wherein a helper spring is mounted in association with each of said leaf springs and each of said leaf spring first ends[[end]], said helper spring having a first leg sandwiched between [[the]] its respective leaf spring and said first end and an angled second leg that projects inwardly, in the same direction as the axis of [[the]] its respective leaf spring, and downwardly, so that as leaf spring flexes, the helper spring free end makes contact and thereby provides additional support and spreads the load on the said leaf spring with which said helper spring is associated over a broader area than the point of contact with

the cross piece [[member]] that would not occur in the absence of said helper [[said]]  
spring; and

adjacent rear downwardly depending mounting plates on each of said sides, said  
plates enabling mounting of the spring assembly to seat arms or for connection to  
mechanisms or seat backs.

8. **(currently amended)** The seat spring assembly of claim 1, 11 or 12 wherein  
[[a]] one of said coil springs[[spring]] is attached to each leaf spring end to provide a  
heavier duty spring unit.

9. (previously presented) The seat spring assembly of claim 1, 11 or 12 wherein  
each W arch is formed and arranged with five formed radii that can flex to provide  
extension and accommodate twisting of said leaf springs which leaf springs are  
sufficiently wide to best follow the contour of the seat cushion for maximum occupant  
seating comfort, and allow the flat leaf spring material to flex without setting up fatigue  
stresses at the ends of said leaf springs.

10. **(currently amended)** The seat spring assembly of claim 1 or 12 wherein:  
said coil springs are generally disposed at the end of each of said leaf springs  
and in the spaces between said leaf springs;

a helper spring is [[springs are]] attached to each of said leaf springs between [[the]] its respective first leaf spring end and the first frame end, and each of the helper springs [[extend]] extends below its respective leaf spring for a length less than the length of [[the]] its respective leaf spring, wherein each of said helper springs[[spring having]] has a fixed end and a free end; and

each of said leaf springs has said substantially flat portion bowed.

11. **(currently amended)** A seat spring assembly for a seat base comprising:
  - a frame having a first and a second frame end with first and second sides connected to the first and second transverse frame ends;
  - a plurality of flat leaf springs having leaf spring first ends connected to the first frame end and leaf spring second ends connected to the second frame end;
  - each leaf spring having one V or W arch adjacent the leaf spring first or second end;
  - each leaf spring has a substantially flat center portion extending longitudinally and aligned horizontally to define a seating support surface;
  - a cross piece, said cross piece spanning and interconnecting said leaf spring second ends, said leaf spring second ends being attached to said cross piece; and
  - a plurality of coil springs, said coil springs connecting said cross piece to said second frame end to transmit loads from each of said leaf springs [[spring]] through each of said coil springs [[spring]] and second cross piece to said second frame end;
  - the leaf spring has said substantially flat center portion bowed and extending between the V and W arches;

there are [[3-6]] 3 to 6 leaf springs for each seating position and a helper spring is attached to at least two of every 4 leaf springs, said helper spring having a fixed end and a free end, with a spring body therebetween, and being attached at [[a]] the fixed end of the helper spring [[end]] between the respective first leaf spring end of its respective leaf spring and the first frame end, and the helper spring free end projecting below its respective leaf spring in a cantilevered fashion and extending for a length less than the length of the leaf spring, wherein each of said helper springs[[spring providing]] provide additional resilience when said body contacts each of said leaf springs[[spring]].

12. (currently amended) A seat spring assembly for a seat base adapted to support a sitting load comprising:

a frame having a first and a second frame end with first and second sides connected to the first and second transverse frame ends;

a plurality of flat leaf springs having leaf spring first ends connected to the first frame end and leaf spring second ends connected to the second frame end, said leaf springs having top and bottom surfaces and first and second side edges;

each leaf spring having one V arch adjacent and spaced inwardly from the respective leaf spring first end of each leaf spring, with the V opening upwardly, and one W arch adjacent and spaced inwardly from the leaf spring second end, with the W opening upwardly, wherein the side edges remain substantially parallel to one another in the V arch and W arch and each of the leaf springs [[spring]] flexes responsive to the

sitting load whereby the V arch and W arch tend to open responsive to the load and close as the load is released[[ and said flat portion flexes responsive to the load]];

each leaf spring has a substantially flat center portion extending longitudinally between the V arch and W arch and aligned horizontally to define a seating support surface, and said flat center portion flexes responsive to the load;

a cross piece, said cross piece spanning and substantially perpendicularly interconnecting said leaf spring second ends, said leaf spring second ends being attached to said cross piece; and

a plurality of coil springs, said coil springs connecting said cross piece to said second frame end to transmit loads from said interconnected leaf springs through said coil springs to said second frame end.

13. (new) The seat spring assembly of claim 12 wherein there are 3 to 6 leaf springs for each seating position and a helper spring is attached to at least two of every 4 leaf springs, said helper spring being attached at one helper spring end between its respective first leaf spring end and the first frame end, and the helper spring other end projecting below its respective leaf spring and extending for a length less than the length of its respective leaf spring.

14. (new) The seat spring assembly of claim 1, wherein the V arch is spaced inwardly from the leaf spring first end and the W arch is spaced inwardly from the leaf spring second end.